Note: All questions are compulsory. Calculators are not allowed. Write down formula where necessary and solve questions step by step.

All questions carry equal marks.

Q No. 1 **(a):** Subtract $2x^6+3x^2+2$ from the sum of $3x^6-3x^2+5x$ and x^4-2x^3+3x-5

(b): Simplify $x^2+8x+16$

Q No. 2 **(a):** A 96cm long wire is given the shape of a rectangle such that its length is 12cm more than the breadth .Find the length and breadth of the rectangle.

(b): Find the solution of the following $\dfrac{x+6}{2} = \dfrac{x+4}{3}$

Q No. 3 **(a):** After 42 years from now , a Cadet will be 5 times as old as he was 8 years back. How old is the boy now.

(b): The radius of circle is 14.3cm.find the area of the circle.

Q No. 4 **(a):** When $\dfrac{22}{7}$ is irrational why 96 is rational number?

(b): Find the power set if A={2,4,6}

Q No. 5 **(a):** Ali sold a car for rupees 1125000 and got 10% profit. find the cost price of car.

(b): If U={1,2,3..10} and B={1,3,7,9} find B^c

Q No. 6 **(a):** Find the square root of 585225 by division method.

(b): If A=N,B=W then Find AUB and BUA, where N is the Natural and W is the whole Number.

Q No. 7 **(a):** The length of the minute hand of a clock is 3.5 cm. Find the distance covered by the pointer of a minute hand in 3 hours.

(b): Simplify $(a^5-b^5) \div (a-b)$